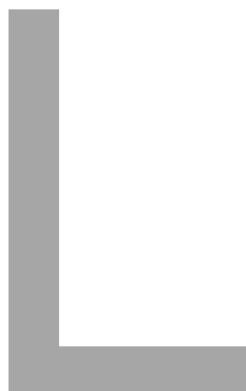




# **QUANTA MAGAZINE**

**Volume 28 - Issue 5  
Aug/Sept 2011**



## Information on the Association

**Membership of QUANTA, the independent QL user group, is by annual subscription. The Membership Secretary can supply full details. Copies of the association's constitution & annual accounts are available from the Secretary. There is an extensive software library. There are active national subgroups. Details are given in the Member's Guide and in this magazine.**

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# CONTENTS

COPY DATE .....	(for next issue) .....	3
EDITORIAL .....	Lee Privett .....	4
QUANTA NEWS .....	Dilwyn Jones .....	6
QUANTA POSTER .....	Advert .....	10
QL FORUM .....	Advert .....	20
COLOUR BLIND .....	Geoff Wicks .....	25
JOCHERN MERZ SOFTWARE .....	Advert .....	30
TOWER OF HANOI II .....	Doug LaVerne .....	31
RWAP Services .....	Advert .....	40
TALLY OH! .....	Steve Poole .....	44
QL TODAY .....	Advert .....	50
SUB GROUPS .....	Meetings .....	49
LATE NEWS .....	Lee Privett .....	53
IN THE NEXT ISSUE .....	Lee Privett .....	55
QUO VADIS DESIGN .....	Advert .....	56

**COPY DATE for OCTOBER/NOVEMBER 2011 ISSUE is:**

**10th November 2011**

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**W**ith the website (as promised last issue) up and running, a big thanks to Dan and all else involved in getting it back to the members and the public at large. Still a few little fiddles here and there, more about that in the news section. Having a few moments for reflection I decided to look back at the very first issue of QUANTA and I have noted a few things. Firstly the number of entries in the contents page (6), in this and recent issues we have in excess of twice that, the font used and size is incredible small and quaint, in this issue we use Arial at around 11pt depending on the amount of content and hopefully very readable. All very well you say! but consider how long this magazine has been going, since February 1984 more or less when the QL came into existence.

QUANTA can only continue with its members (and others) help, so if you have something you think is of interest then please let us know, as ever the usual email or snail mail to the [editor@quanta.org.uk](mailto:editor@quanta.org.uk)

As to this edition, there are some interesting developments in both hardware and software for the QL, and some very interesting planned hardware that may or may not see the light of day and the usual news items and responses to the queries that come in to QUANTA's helpline.

### ***Competition***

For those of you with an artistic eye may have noticed the new QUANTA website with an unfamiliar logo, this is temporary, and we thought it might be a good idea to let the members send in their own submissions for the website. These will be judged by the committee at the AGM 2012 where a winner will be decided. Any submissions must be web colour friendly, up to a maximum of 1000x1000 pixels and supplied in two formats for bitmapped PNG (Portable Network Graphics which uses lossless compression routines) and EPS (EPS or Encapsulated PostScript is a standard graphics file format for exchanging images). There will be a small prize for the winner, good luck.

# QUANTA Magazine

## Listings

In future issues we are hoping to use a new font (available from Dilwyn's web site) for all program listings, however it may not be to everyone's liking, therefore here are the two identical listings for members to have their say and vote on either one.

Both of the fonts have fixed spacing for each character, and in the past we have used Courier New as this is fairly common across all PC systems. It however, looks nothing like the font on the original QL, the second listing uses a font that does, so over to you.

### **Courier New**

```
4500 DEFine PROCedure S
4520 REMark Save file
4540 SAVE_O win1_Boot
4550 SAVE win1_Boot_bak
4560 END DEFine
```

### **QL JS ROM**

```
4500 DEFine PROCedure S
4520 REMark Save file
4540 SAVE_O win1_Boot
4550 SAVE win1_Boot_bak
4560 END DEFine
```

Lastly, a QUANTA member Doug LaVerne has taken an existing program from the library and 'tinkered' with it, the results you can see for yourselves. How many other library programs could use a bit of 'tinkering'? Go on, live up to the QUANTA name, you know you want to.

If you have QL-related news that you'd like us to include on this page, please get in touch with News Editor - Dilwyn Jones at [news@quanta.org.uk](mailto:news@quanta.org.uk)

### Just Words! News - Mapping Changes Planned

Just Words! has commenced a project to improve the data on its maps page by adding QL friendly databases. Currently the maps are in the form longitude - space - latitude and can only be viewed on a QL by using a program by Hugh Rooms published in QL Today (QLT v12 i3 p35). Just Words! intends to convert the databases into QL x,y coordinates for direct importation into QL programs.

The conversion work is easy and is already well advanced, but documentation and help programs could take time to develop. One complication is the huge size of the databases, which have to be printed onscreen using the QL's POINT command. Just Words! is investigating the possibilities of programs to allow users to shorten some databases and to extract sections to cover a small geographic area. It is also considering a longitude/latitude to QL coordinate conversion table.

Just Words! also hopes to post a few further short articles on the help and advice page.

[www.gwicks.net/justwords.htm](http://www.gwicks.net/justwords.htm)

Geoff Wicks has now added a QL news page to the Just Words! website. This is experimental (at the time of writing) and Geoff hopes it will be a permanent feature, but gives no guarantee yet.

He thanks to all the people who have visited the site. There were 489 visits in the first month although 168 of these were the Google and Yahoo search engine robots. He estimates about 300 visits from QL-ers

# QUANTA Magazine

which far exceeded his initial expectations.



*Just Words! Website, maps page*

## QL Today DVD

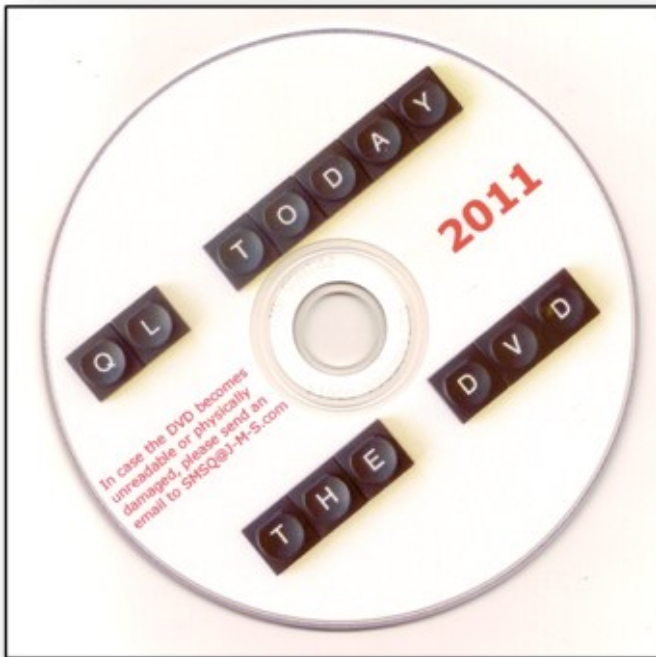
**T**o celebrate the start of Volume 16 of the magazine, QL Today has released a QL DVD, packed with everything from an offline copy of the Dilwyn Jones website to (legal!) copies of QL CDs and even scanned copies of all 15 volumes of QL Today right from the beginning as PDF files. The DVD is supplied free to QL Today subscribers – you can subscribe via Quo Vadis Design website <http://www.ql-qvd.com/products.html> or direct with Jochen Merz Software <http://smsq.j-m-s.com/>

## QUANTA Magazine

The DVD was put together by Urs König in Switzerland, who later wrote of a little video he made:

“Today I gave the DVD a go under Microsoft Windows 8. Yes, 8 not 7. I have the Developer Preview version (an alpha version) running in Oracle's VirtualBox on my PC. Here's a short video of how the DVD "does" under Windows 8:”

<http://www.youtube.com/watch?v=ilvidN6NIF0>



### Aurora Manual

**F**ollowing a recent request on the QL Users mailing list, I have added copies of the Aurora manual and technical guide as PDF files, for those who do not have a copy of Quill to read the originals. You can download them from <http://>



[www.dilwyn.me.uk/docs/manuals/index.html](http://www.dilwyn.me.uk/docs/manuals/index.html) - scroll down to the "Qubbesoft" section.



### Ser-Usb News, by Adrian Ives

**T**he latest version of the Ser-USB Driver is now available. Although this was intended to be a maintenance release, a number of new features have been added, not the least of which being a completely new driver for FAT volumes!

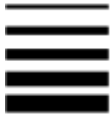
The download locations have been sent out to all registered users.

Here is the change list:

New alternative Ser-USB FAT Driver allows the Ser-USB to be used with FAT12, FAT16 and FAT32 volumes.

Ser-USB Native Driver includes hooks to allow the FAT Driver to work alongside it.

# Q U A N T A



## Independent QL Users Group

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Further details from the Membership Secretary

**Keith Dunbar, 44, Dalton Avenue,  
Stretford, Manchester, M32 9TP (UK).**

**Tel. 07789 483 800**

**Email: [membership@quanta.org.uk](mailto:membership@quanta.org.uk)**

**Visit the QUANTA Web Site**

***<http://www.quanta.org.uk>***

## QUANTA Magazine

USBWizTerm detects either Native or FAT Ser-USB drivers and works correctly with either (or both) loaded.

Trap #2/3 I/O Servicers are now run able to run entirely with private stack space on versions of the OS that support it (SMSQ, Minerva).

Broken MOUNT command fixed.

Fixed bug in ROM driver that tried to change the baud rate back to 9600 after setting it to 4800 on standard QLs.

The ROM driver will now do an automatic QM\_GO if it is started with a configuration to use a standard QL.

Equivalent of a QM\_GO can be invoked from machine code with a special long function code argument to qm\_do\_async\_op.

New QM\_STOP command in the installable Queue Manager switches to synchronous I/O and forces all Queue Manager services to shut down.

Equivalent of a QM\_STOP can be invoked from machine code with a special long function code argument to qm\_do\_async\_op.

New functions in the Driver S\*BASIC Extensions to read drive and partition information:

DRIVE\_MAP(d) : Return the address of the drive's map

DRIVE\_NAME\$(d) : Return the name of the drive

DRIVE\_PTCOUNT(d) : Return count of partitions on drive

DRIVE\_PTSTART(d,n) : Return start LBA of partition on drive

DRIVE\_PTNAME\$(d,n) : Return name of partition on drive

Default number of buffers increased from 64 to 128 in the light of real-world user experience with the driver

Partition Manager no longer requires the Driver S\*BASIC Extensions or Toolkit II to be loaded

Updated user manuals are here:

Native Driver User Manual:

[http://www.memorylanecomputing.com/inde ... manual.pdf](http://www.memorylanecomputing.com/inde... manual.pdf)

## QUANTA Magazine

FAT Driver User Manual:

[http://www.memorylanecomputing.com/inde ... driver.pdf](http://www.memorylanecomputing.com/inde...driver.pdf)

We are also now supplying the Ser-USB Native and FAT drivers together (switch selectable) on our new QL ROM cards.

More information about the ROM Card can be found here:

<http://www.memorylanecomputing.com/serusbrom.htm>

and here:

<http://www.memorylanecomputing.com/products.htm>

Special upgrade prices on the new ROM card are available to all existing Ser-USB.

Ser-USB cables are also available from the Memory Lane Computing website. You normally get one cable of your choice with the device, but for anyone who needs more than one cable (e.g. one QL has a traditional British serial port, and you also have a Samsung QL with a 9-pin D serial port connector, or require an additional SuperHermes SER3 cable) you can now buy additional cables direct from Memory Lane Computing.

If you would like any further information or have any questions, contact details are on the web site at <http://www.memorylanecomputing.com> - their postal address is Memory Lane Computing Ltd, 10 Hillcrest, Shortlanesend, Truro, Cornwall, TR4 9DS, U.K.



*Inside the Ser-Usb*

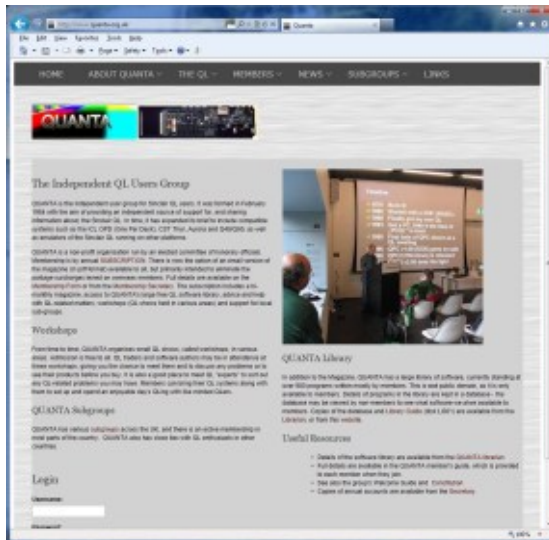


*The Ser-Usb ROM card*

## Quanta Website Back Online

**Q**uanta's website is now back online! Complete with a new look and new hosting service, the website is one of the few on the QL scene which is managed by a Content Management System, allowing all members of the committee access to update the website. In time, it is hoped that subgroups can have their own pages which they can update themselves simply by logging in from any browser. I won't spoil it too much for you what's on the website – have a look yourself at <http://www.quanta.org.uk>

### *The new-look Quanta website*



## Austrian QL Meeting 2012

**G**erhard Plavec has announced he intends to hold a QL meeting at Prottes (near Vienna) next year, similar to the meeting in 2010. The meeting is planned for 7th - 10th June 2012 and will consist of both QL and social events. The main QL meeting is planned for Saturday 9th June. Further details to

## QUANTA Magazine

follow – you can see pictures of the last meeting on Gerhard’s website at <http://www.kuel.org/> and Anton Preinsack’s video can be seen on YouTube at <http://www.youtube.com/watch?v=O4Q7IUMKvRM>

### Alien Hijack

**C**ontinuing his efforts to get QL games from the 1980s re-released, Rich Mellor writes:  
“I have now been able to secure the OK to publish Alien Hijack - the 3D arcade adventure game for the Sinclair QL, originally written by Chisoft and sold under the Maxtronics brand - it can even use their QTALK module.

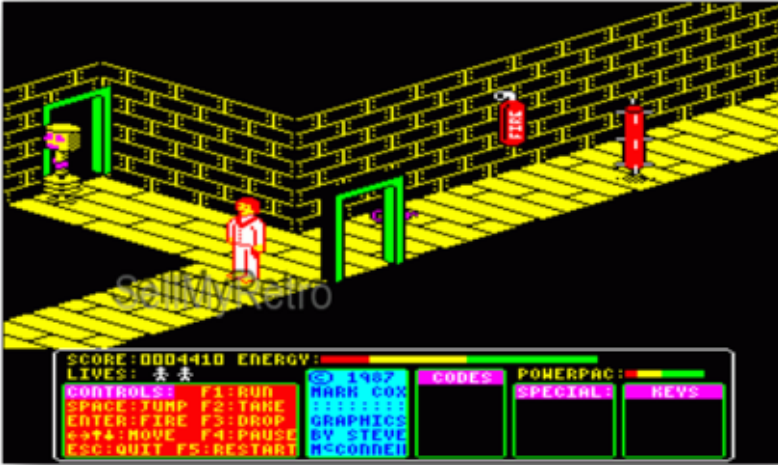
Alien Hijack places you on-board a ship, where you are the engineer. Having entered the Bermuda Triangle, you find that the ship has been taken over by aliens and the crew vanished.

You have to explore 192 rooms to collect 3 codes, which together form the shape of an anchor, avoiding the various entities inhabiting the rooms. With these codes, you can regain control of the ship.

There is food to replenish your strength, but moving about takes some getting used to.

See

[http://www.sellmyretro.com/offer/details/Sinclair\\_QL\\_3D\\_Arcade\\_Game%3A\\_Alien\\_Hijack-1738](http://www.sellmyretro.com/offer/details/Sinclair_QL_3D_Arcade_Game%3A_Alien_Hijack-1738)



*Alien Hijack (picture from SellMyRetro.Com)*

## Turbo Toolkit Updated

**G**eorge Gwilt writes:

Version 3.39 of Turbo\_Tk\_Code (Turbo Toolkit) is on my site <http://gwiltprogs.info/>

This version allows COMMAND\_LINE to select a daughter SBASIC's channel 0 by giving as a parameter the ID of any channel opened to that SBASIC. The opened channel does not need to be a CON device.

## Magazine Index

**B**rian Kemmett has now completed the work on producing a complete index to all 15 volumes of QL Today magazine. They are produced in a choice of three versions:

Individual PDF files for each of the 15 volumes of the magazine

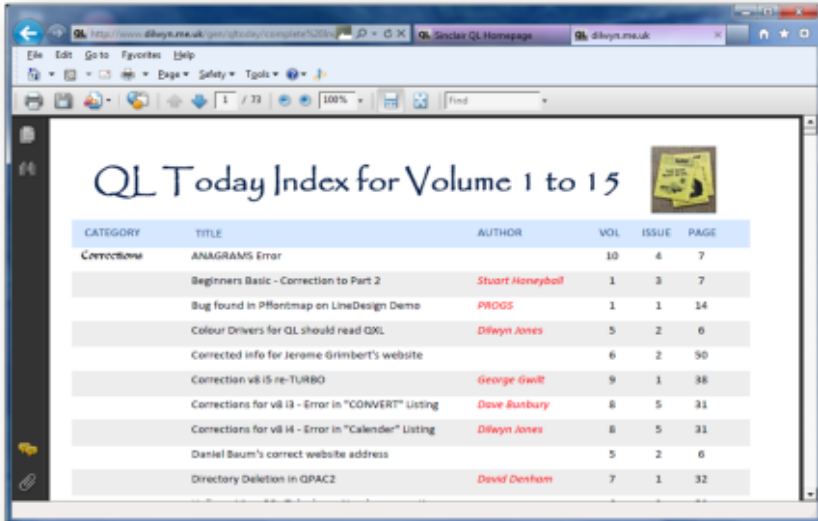
A single PDF covering all 15 volumes in one index



# QUANTA Magazine

A set of 3 PDF files, each with an index to 5 volumes of the magazine

These can all be downloaded from the QL Today page on my website at <http://www.dilwyn.me.uk/gen/qltoday/qltoday.html>.



CATEGORY	TITLE	AUTHOR	VOL	ISSUE	PAGE
Corrections	ANAGRAMS Error		10	4	7
	Beginners Basic - Correction to Part 2	Stuart Honeyball	1	3	7
	Bug found in PFontmap on LineDesign Demo	PROGS	1	1	14
	Colour Drivers for QL should read QXL	Dilwyn Jones	5	2	6
	Corrected info for Jerome Grimbert's website		6	2	50
	Correction v8 i5 re-TURBO	George Gwilt	9	1	38
	Corrections for v8 i3 - Error in "CONVERT" Listing	Dave Sanbury	8	5	31
	Corrections for v8 i4 - Error in "Calendar" Listing	Dilwyn Jones	8	5	31
	Daniel Baum's correct website address		5	2	6
	Directory Deletion in QPAC2	David Denham	7	1	32

*QL Today Index - all 15 volumes*

## QL Entered The Matrix?

**B**ack in August, a QL user on the QL Forum wrote that his QL had entered The Matrix. If you've ever seen that film, you'll know what he means, but just in case take a look at this video on YouTube: <http://www.youtube.com/watch?v=IRxG1HvzfQU>

## Latest QL Hardware Mod Idea...

**I**'m rather surprised nobody has thought of this before. Back in August, Peter Scott happened to mention on the QL Forum an idea he'd had after reading in some old Quanta magazines that a suggested hardware mod at the time was to move the regulator

## QUANTA Magazine

from next to the microdrives to outside the case to prevent things getting too hot. So far, so good, then he went on with firmly tongue in cheek: “Maybe someone could glue a fan blade to the microdrive spindle so a DIR command would give a waft [of] cooling air.” As far as I know, it wasn’t April 1<sup>st</sup> at the time...

### Fleet Tactical Command

If you’ve ever wondered what the networked Fleet Tactical Command simulation game on the QL was like, you might like to take a look at a video now on YouTube at

<http://www.youtube.com/watch?v=nAcQiqw5Xvo> which shows the game in action. Sadly, as the game is no longer in production, you’d have to rely on finding a copy for sale on SellMyRetro, Ebay, or similar sites, although there is a time limited demo version on my website at <http://www.dilwyn.me.uk/demos/index.html> to whet your appetite.

The Fleet Tactical Command video forms part of an ever increasing number of QL-related videos on YouTube.



*Fleet Tactical Command video*

# QUANTA Magazine

## Zip Files On QemuLator for Mac OSX (Lion)

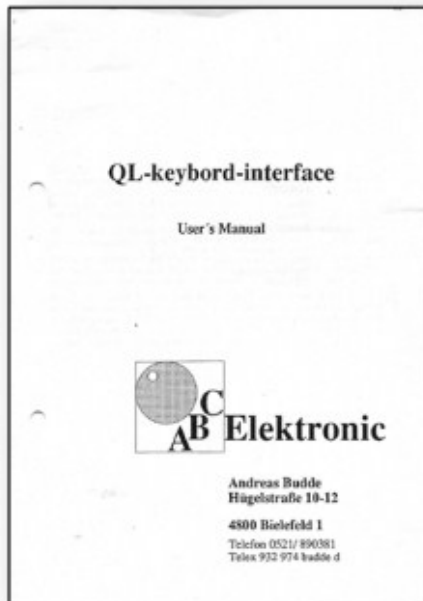
**L**ee Privett has uploaded a short video to YouTube on how you can use QemuLator to copy files from a zip file to a standard folder on your drive using a MAC based computer running Lion. It provides a good example of how the latest versions of QemuLator can handle the ZIP and QLPAK files so easily.

<http://www.youtube.com/watch?v=sxQnN7MzT7I>

## ABC Keyboard Interface Manual

**F**or anyone who may have acquired a second user ABC Elektronik keyboard interface without a manual, this is a replacement 8 page manual for the ABC Electronic QL Keyboard Adaptor which plugged into the QL's ROM port.

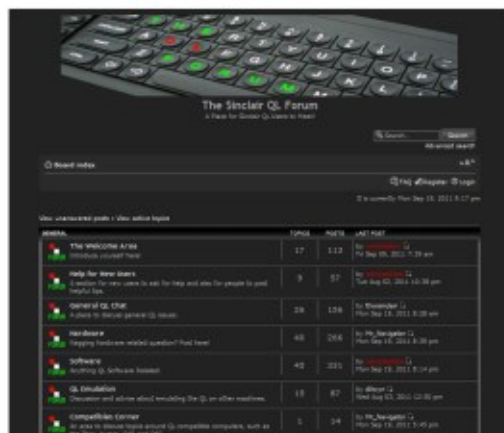
Available as a PDF file only, from <http://www.dilwyn.me.uk/docs/manuals/index.html>



<http://qlforum.co.uk>



A Place for Sinclair QL Users to Meet!



THE QL FORUM is an informal online community for talking about all things QL.

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## More SuperHermes

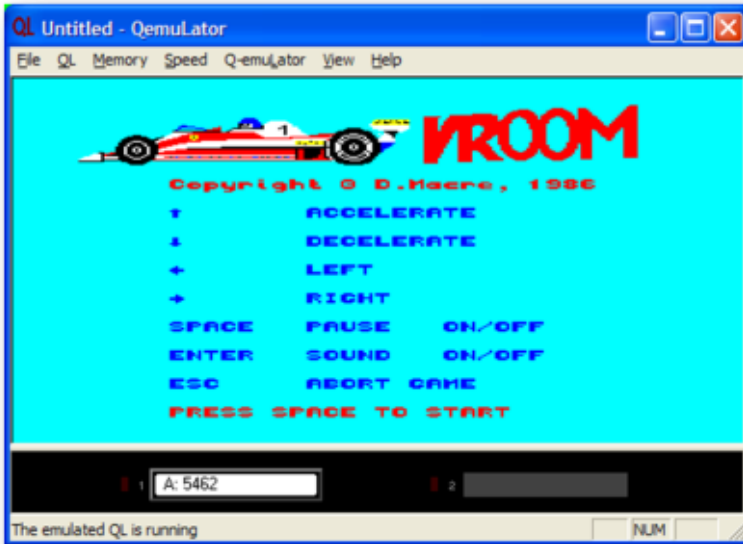
**R**ich Mellor has reported that he hopes to have more full SuperHermes units soon (this was on September 22<sup>nd</sup>). Apparently Tony Firshman had nearly finished the building, until work got in the way for a while. When available, the units will sell for about £115.

## Getting Audio CD Table Of Content From The Internet

**I**n a new series of articles in QL Today magazine, Wolfgang Lenerz has started to describe how a CD player running on QPC2 (only) can use the internet access system on QPC2 to access an online database to fetch the title of the CD, audio track titles etc from a live database on the internet. This is a bit of a first on a QL – we’ve always been able to play audio CDs from QPC2, but now we can access more information too. To follow this article, subscribe to QL Today magazine to read the articles, and download the accompanying files from Wolfgang’s website at [http://www.lenerz.com/QL\\_Stuff/Download/](http://www.lenerz.com/QL_Stuff/Download/) (the URL is case sensitive and contains a space between “QL” and “Stuff”). You can also download more of Wolfgang’s QL software from there, of course.

## Oops...

**O**n page 16 of the last issue I reported that RWAP Software had re-released the Vroom game, and included a screen dump of the game. Unfortunately, I failed to realise that the screen dump had become corrupted, so apologies to Rich Mellor and let’s try again...



*Introductory screen, all going well so far...*



*Still just about going well, if slowly...*



*Until...oh dear! I'll never be a Lewis Hamilton...*

## Q-BUS

**T**his is a spin-off from Memory Lane Computing's Ser-USB project. Instead of creating a ROM port interface dedicated solely to the Ser-USB++ (the Ser-USB++ operates via the QL external ROM connector at the rear of the case), this project would be built upon a new base peripheral called Q-BUS. This card will plug into the ROM port and provide an external bus with 256 individually addressable read/write 8 bit I/O ports. It will also provide operating system extensions to manage the new I/O bus.

The Q-BUS prototype has been constructed using discrete logic, but this will ultimately be replaced with a single PLD to do all the address decoding, latching etc.

A prototype version of Q-BUS already exists, and pictures of the latest Q-BUS Prototype are now at Memory Lane Computing's Facebook page:

<http://www.facebook.com/memory.lane.computing>

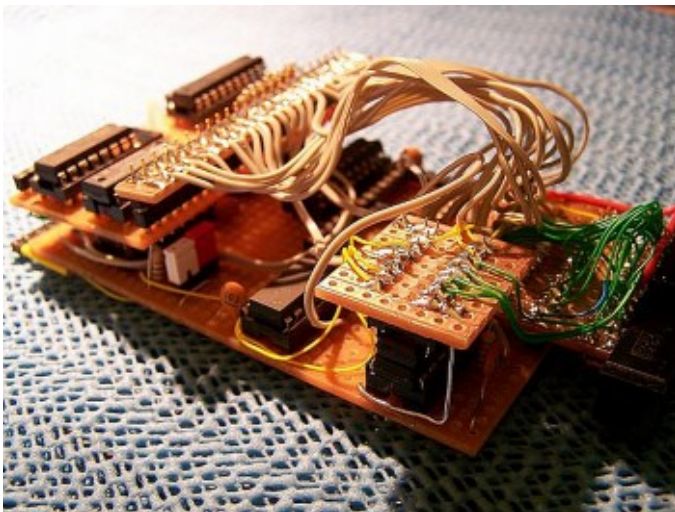
## QUANTA Magazine

At the beginning of October, Adrian Ives wrote about the latest developments on the ql-users mailing list:

“The latest Q-BUS version has been modified to use the expansion connector on the new QL ROM card and has some additional control port logic which improves the reliability of the interface with the PIC chip.

I think it's obvious that a commercial product based upon a design using so much discrete logic is really a non-starter, so this has to be seen as a proof of concept which would be translated into a solution using a CPLD with the minimum of additional components. It's also highly likely that the final solution (if there is one) will use SPI rather than the parallel ports seen here ... and may look nothing like this)

On one of the pictures you will notice the rather unique practice of mounting two 14 pin DIPs upside-down on top of each other ;) This is because the three NAND gates from the old QL ROM cartridge card, which was originally used to make the connection to the QL, have been moved onto the Q-BUS board and there wasn't room for the 74HCT10 without a complete rebuild. The "daughter" board, perched precariously on top of the main board, contains the logic for the control port; most





## QUANTA Magazine

importantly the lines ~ATTN and ~BUSY which are used to handshake with the PIC.

The 34 pin box header at the "front" of the board connects to the QL ROM Card, the 25 pin connector at the "back" brings out the Q-BUS interface. The two connectors on the daughter board expose the control port and auxiliary address decode lines. All of this logic maps the Read Data port to \$FE00, Read Control Register to \$FE01, Select Device to \$FDxx, Write Control to \$FCxx and Write Data to \$FFxx (where xx represents a data or control byte in the low order eight bits of the address)

Even if this design doesn't make it through to production in its present form, this has definitely been a useful project to test the capabilities and reliability of the ROM port."

You can see the full set of pictures of the Q-BUS prototype on the Facebook page above. I have reproduced one image below, so that you get an initial idea of what the prototype looks like.

### COLOUR BLIND?

**Geoff Wicks**

It is one of the strange quirks of the QL that what initially was one of its greatest strengths soon became its almost fatal weakness. It is hard to believe that when the QL was launched it had superior graphics to almost every other computer. Certainly there was nothing comparable for the same price.

Other computers soon overtook us and QL users became the poor relations struggling to manage with just 4 or 8 colours. Throughout much of the 1980s and 1990s we yearned for more colours, but were told that it was a forlorn hope. The myth at the time was that the QL could never have more than 1Mb of memory and that was too small to support

## QUANTA Magazine

memory hungry graphics. Miracle Systems exploded the memory myth with the Gold and Super Gold Cards, but their projected graphics card never developed into a commercial product.

More colours have been with us now for just over 10 years, but they have scarcely entered into main stream use. Perhaps we think colours are too complicated and are for experts only. Balderdash!!! If you can program in SuperBasic and have a system that can support the new colours, then you can program in them. And you can still do it if you know nothing about pointer environment programming. If you do not believe me, then I have a basic program of just over 40 lines to type in. It was the first program I wrote using the new colours.

The new colours first became available for the Q40 in 1999 and for QPC and the QXL a year later. There was a longer wait before they were introduced on the Aurora Card.

For various technical reasons each QL platform had its own implementation of the new colours. For example, the Aurora card has only limited memory available and can only handle 256 colours compared with thousands for the other platforms.

A consequence of this was that the new colours were initially complicated. To use them you had to first enter one of four commands, COLOUR\_QL, COLOUR\_PAL, COLOUR\_24 or COLOUR\_NATIVE. It put off some of the experts from learning to program in the new colours.

What the QL urgently needed was a much simpler way of using the new colours common to all platforms. That happened in 2003 when Marcel Kilgus developed a new Window Manager with a new implementation of the colours. The Window Manager is part of the pointer environment, but

## QUANTA Magazine

this is already built into the operating systems that support the new colours. You need to know no further details of the pointer environment to program in them.

To use the new colours all you have to do is to put WM\_ before certain keywords. (WM means "Window Manager")

PAPER becomes WM\_PAPER

INK becomes WM\_INK

STRIP becomes WM\_STRIP

BLOCK becomes WM\_BLOCK

BORDER becomes WM\_BORDER

If you were to take one of your old programs and modify it to use the new colours by putting WM\_ before the keywords you might be initially disappointed. When you run it, it will look just the same as before. It is meant to look the same. The first 256 of the new colours are exactly the same as the QL colours.

The new colours are not one group of colours, but are several different groups.

Colours 1 to 256 are exactly the same as the QL colours.

Colours 257 to 511 are called the palette colours. These are mainly of interest to Aurora users.

Colours 512 to 767 are for the experts only!

Colours 768 to 1023 are shades of grey.

Colours 1024 to 1279 are unusual as they can only be used with the

## QUANTA Magazine

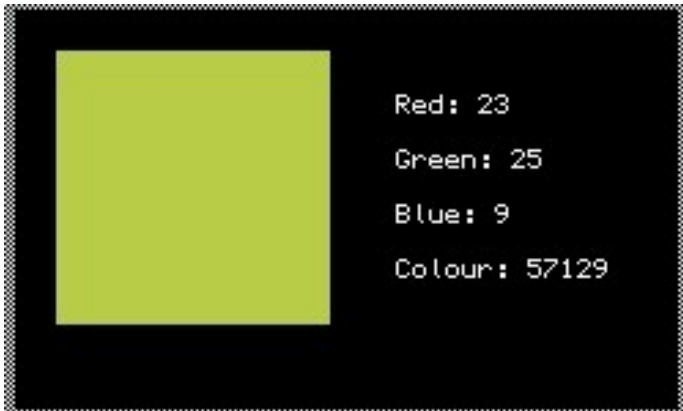
WM\_BORDER command. They allow you to create 3D effects.

Colours 16384 to 32767 are stipples.

Colours 32768 to 66535 are called RGB colours.

As you have probably guessed by now the big problem with the new colours is not the programming, but knowing what number to use for the colour you want. You can find the answer to that on the Just Words! website, but I shall come to that in a moment.

I promised you a short basic program using the new colours and this is the program I wrote to learn about them and in particular to discover which number belonged to which colour. It helps you to see how the colours are built up from their red, green and blue components. By the way to use the new colours you have QPC2, a Q40/60, a QXL or an Aurora card using a version of SMSQ/E above 3.00.



```
100 WINDOW 250,150,0,0
110 BORDER 2,248
120 PAPER 0 : INK 7 : CLS
130 red=0 : green=0 blue=0
140 print_colours
150 REPEAT change
```

# QUANTA Magazine

```
160 e$=INKEY$(-1)
170 e=CODE(e$)
180 SElect ON e
190   = 114 : REMark r key - increase red
200     red = red + 1
210   = 82 : REMark  Shift+r key - decrease red
220     red = red - 1
230   = 103 : REMark g key - increase green
240     green = green +1
250   = 71 : REMark Shift+g key - decrease green
260     green = green - 1
270   = 98 : REMark b key - increase blue
280     blue = blue + 1
290   = 66 : REMark shift+b key decrease blue
300     blue = blue - 1
310   = 208 : REMark Up cursor key - increase
brightness
320     red = red +1 : green = green +1 : blue =
blue +1
330   = 216 : REMark Down cursor key - decrease
brightness
340     red = red -1 : green = green -1 : blue =
blue -1
350 END SElect
360 IF red>30 : red=31
370 IF green>30 : green=31
380 IF blue>30 : blue=31
390 IF red<1 : red=0
400 IF green<1 : green=0
410 IF blue<1 : blue=0
420 print_colours
430 END REpeat change
440   :
450 DEFine PROCedure print_colours
460 AT 3,23 : PRINT "Red: ";red;" "
470 AT 5,23 : PRINT "Green: ";green;" "
480 AT 7,23 : PRINT "Blue: ";blue;" "
490 Colour=32768 + 1024*red + 32*green + blue
500 AT 9,23 : PRINT "Colour: ";Colour
510 WM_BLOCK 100,100,15,15,Colour
520 END DEFine
```

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If you are interested in learning more about the new colours then you can download a colour tutorial from the help and advice page of the Just Words! website:

[www.gwicks.net/justwords.htm](http://www.gwicks.net/justwords.htm)

I wrote the tutorial for a presentation at the 2005 QLis21 show and later published it in QL Today. An updated and revised version appears on the website. The tutorial uses a simple basic program of 11 lines to take you through the various different groups of colours. It also gives you advice about which numbers to use for which colour.

Years ago when you were writing SuperBasic programs you probably longed for more than 4 or 8 colours. Maybe the time has come to dig out some of those old programs and give them a makeover.

### **TOWERS OF HANOI II**

**Doug LaVerne**

**H**ere's a fun diversion. Paul Kennedy added his "Towers of Hanoi" to QUANTA library Games in the 1980s. In "Towers" the player moves discs from one location to a final destination under a challenging restriction. Mr. Kennedy's implementation of "Towers" was fixed at five discs. I have expanded this so the player can select from four to eight discs. And, I have given the player the option of viewing a tongue-in-cheek, but ultimately serious, hint on the underlying method for the game. The hint consists of two quick "demo" games on the display.

"Towers of Hanoi", also known as "Towers of Brahma", consists in one common form of three poles with a set of discs starting on one pole. When one has properly moved all discs to the destination pole from the source pole, under restrictions that are rules of the game, the game is

## QUANTA Magazine

over or won.

It is possible to lose one's way, even with only a few discs—and not get to the end. It is possible to get lost and recover. It is possible to finish in the minimum number of moves. The minimum is  $(2^{**} \text{ number\_of\_discs}) - 1$ , or 31 moves for five discs and 255 moves for eight discs.

Nine discs would be 511 moves, and ten discs would be 1,023—or a good while. Once you've become good at the game, five discs can be done quickly, seven can be done in about five minutes, and eight should be about ten minutes. The old family finished-wood set has seven discs.

One legend says there is a temple in India with three worn poles and sixty-four golden discs. Brahman monks fulfilling an ancient prophecy are moving the sixty-four discs. When they finish the game the world will end. This will require  $(2^{**} 64) - 1$  moves. At one move per second, this will take over 585 ... hours? Days? Weeks? ... um ... billion years. Over 18 exa moves.

“Towers” rules are brief: Starting with the game set up (three poles, one of which has a group of discs in increasing order of size, from smallest at the top to largest at the bottom, in the shape of an inverted, truncated cone)—

Move one disc at a time;

Select the top disc of any stack to move to the top of another stack (or an empty pole), except that:

You may never place a disc on top of a smaller disc—The Restriction.



## QUANTA Magazine

Information on “Towers” can of course be Google’d or otherwise obtained. Googling will bring up Wikipedia as one of the first hits. Wikipedia refers to seven or even nine discs as “toy”, but then Wikipedia’s article is full of algorithms of solution and math(s) the casual game player likely does not want to bother with.

Besides—this version IS FOR THE QL! It works on a SGC with a Sinclair 12” screen and under QPC on a 17” screen too. Various reviews have remarked, e.g., “nice graphics.” The original “look and feel” has been preserved in this expanded mod. There are other QL versions of “Towers” but what I’ve seen is not as nice graphically.

Screen captures show:

The original five-disc form of Mr. Kennedy’s “Towers of Hanoi”, at the start. In short, the mod with number of discs as five. (Note in the Kennedy version and for now the LaVerne mod the starting pole or “base” is always Base 1 and the destination pole or Base is always Base 3).

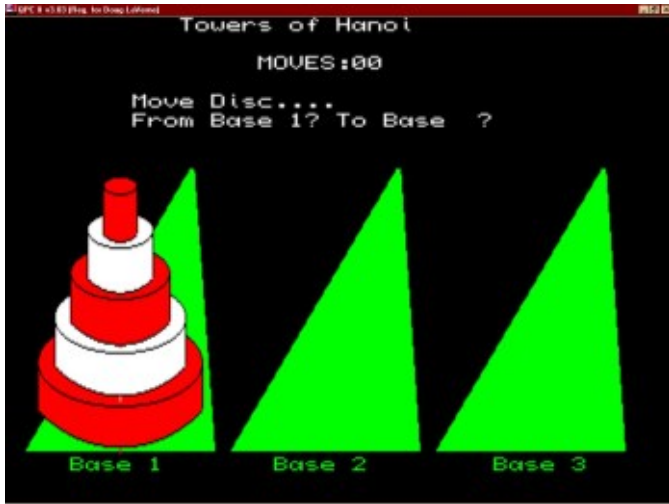
Six discs (at the start).

Eight discs (at the start).

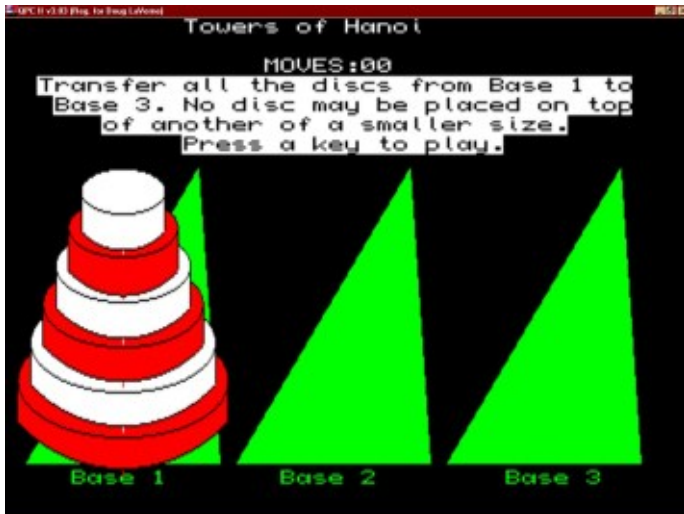
Eight discs (but in the middle of a game).

Eight discs finished (in the minimum number of moves!)

The original five-disc form of Mr. Kennedy’s “Towers of Hanoi”, at the start:



Six discs (at the start).



Eight discs (at the start).

# QUANTA Magazine



Eight discs (but in the middle of a game).



Eight discs finished (in the minimum number of moves!)

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## ADDENDUM: PLATFORMS

QL: Super Gold Card 2.47, SMSQ/E 2.75, Qubide/Rebel 1.41 HDD 256 MB, Sinclair "Vision QL" Monitor 12", 3.5" generic floppies x 4, mini-tower, MDiscOver 2.28; actual programming & debugging.

PC: Dell PIII 733 MHz, Win98SE, QPC II 3.03, 90GB HDDs, Trinitron Monitor 17", 3.5" floppy, tower, Paint Shop Pro 7; screen shots & way station to Word processing on the Mac, #3, via floppy (especially program listing).

Mac: Mac Book Pro 2007, Office 2008 for Mac (including Word); final assembly of article pieces, text + screen shots + program listing.

## PROGRAM LISTING

As far as possible Mr. Kennedy's original line numbering has been preserved and mods use numbers that are not multiples of 10, or are greater than the original high number.

## QUANTA Magazine

```
100 REMark Towers of Hanoi
110 REMark by Paul Kennedy
120 REMark March 1986
122 REMark Mods for variable no. of discs at
start, The Hint, & more
123 REMark by Doug LaVerne
124 REMark September 7, 2011
125 REMark added 1185 END DEFine to prevent
error on SMSQ/E
128 REMark (DJ 29/07/10)
130 play
140 REMark
150 DEFine PROCedure initialize
160 REMark
170 MODE 4
180 WINDOW 512,256,0,0
190 SCALE 220,0,0
200 CSIZE 2,0
210 PAPER 0 : INK 7 : CLS
215 how_many
220 DIM stack(3,8),num(3)
230 stack(2,1)=0 : stack(3,1)=0
240 num(1)=num_discs : num(2)=0 : num(3)=0
250 FOR x = 1 TO num_discs : stack(1,x) = x : NEXT
x
260 moves = 0 : move_from = 0 : move_to = 0 :
erase = 0
270 END DEFine initialize
280 REMark
290 DEFine PROCedure set_screen
300 REMark
310 CLS
320 AT 0,11 : PRINT "Towers of Hanoi" : AT 2,16 :
PRINT"MOVES:00"
330 FOR x = 0 TO 2 : BASE x : NEXT x
340 AT 23,4 : PRINT"Base 1" : AT 23,17 :
PRINT"Base 2" : AT 23,31
342 PRINT"Base 3"
350 FOR x = 1 TO num_discs : disc 1,x,x : NEXT x
360 PAPER 7 : INK 0
```

## QUANTA Magazine

```
362 AT 3,2 : PRINT"Transfer all the discs from
Base 1 to"
364 AT 4,3 : PRINT"Base 3. No disc may be placed
on top"
366 AT 5,6 : PRINT"of another of a smaller size."
367 IF num_discs <= 2 THEN PAPER 0: INK 7: RETURN :
END IF
368 AT 6,11 : PRINT"Press a key to play." : PAPER
0 : INK 7
370 a$ = INKEY$(-1)
380 END DEFine set_screen
390 REMark
400 DEFine PROCEDURE BASE (which_base)
410 REMark
420 INK 5
430 pos_base = which_base * 100
440 FILL 1
450 LINE pos_base+10,24 TO pos_base+102,24 TO
pos_base+92,154 TO pos_base+10,24
460 FILL 0
470 END DEFine BASE
480 REMark
490 DEFine PROCEDURE disc (which_base,
which_disc,pos_disc)
500 REMark
510 done = 0
520 centre_x = ((which_base -1)*100) + 56
521 IF num_discs < 6 THEN konst1 = 20: ELSE konst1
= 100/num_discs
522 centre_y = (pos_disc*konst1)+44 : height =
stack_ht/num_discs
524 IF (num_discs < 4 AND height > default_height)
THEN height = default_height
526 IF num_discs < 6 THEN konst2 = 24: konst3 = 4 :
ELSE konst2 = 28: konst3 = 3
530 radius = konst2 - (which_disc * konst3 ) +
erase
540 FILL 1
550 IF which_disc/2 = INT(which_disc/2) THEN INK
7 : ELSE INK 3
```

## QUANTA Magazine

```
560 IF erase = 1 THEN INK 5
570 REPEAT loop

580 CIRCLE centre_x,centre_y,radius,2,PI
590 FILL 0
600 IF done=0 THEN FILL 1
610 LINE centre_x-radius*2,centre_y TO centre_x-
radius*2, centre_y-height
620 IF done=0 THEN LINE centre_x,centre_y-radius TO
centre_x, (centre_y-radius)-height
630 LINE centre_x+radius*2,centre_y TO
centre_x+radius*2, centre_y-height
640 IF done=0 THEN LINE centre_x-radius*2,centre_y
-height TO centre_x+radius*2,centre_y-height
650 ARC centre_x-radius*2,centre_y-height TO
centre_x+radius*2, centre_y-height, PI/2
660 IF done=1 THEN done=0 : EXIT loop
670 IF erase=1 THEN erase=0 : EXIT loop
680 done=1 : INK 0 : FILL 0
690 END REPEAT loop
700 END DEFINE disc
710 REMARK
720 DEFINE PROCEDURE play
730 init2
735 initialize
740 set_screen
745 if_hint
750 get_move
760 END DEFINE play
770 REMARK
780 DEFINE PROCEDURE get_move
790 REMARK
800 BLOCK 500,45,0,30,1
810 INK 7 : PAPER 0
815 IF num_discs > 2
820 AT 4,8:PRINT "Move Disc...."
830 AT 5,8:PRINT "From Base ?"
840 a$ = INKEY$(-1)
850 move_from=CODE(a$)-48:IF move_from<1 OR
move_from>3 THEN GO TO 840
```

# RWAP Software

We have been working hard to safeguard the future of the Sinclair QL through creating an online QL Wiki backed by a repository of QL titles.

The QL Wiki enables people to see what software and hardware was produced for the Sinclair QL. The repository enables people to purchase working copies when their microdrive cartridges fail, or they move onto disks or emulators. Where we can, we obtain permission from the copyright holders to re-release items on the market.

This has enabled us to bring some of the titles back to the market as well as re-ignite interest in the Sinclair QL and its emulators.

Old favourites brought back to life include:

- E.V.A., Vroom
- Black Knight, Double Block
- Jungle Eddi, The Lost Pharaoh
- Pengi, the Lonely Joker
- Microdeal's Flight Simulator, QL Hopper, The King,
- Night Nurse and Cuthbert in Space
- Mortville Manor, Darkside of the Moon (£10)

We still retain our existing catalogue, including:

- Open Golf, Return to Eden,
- Stone Raider II, The Prawn,
- Hoverzone, Lost Kingdom of Zkul,
- Deathstrike, Horrorday,
- Flightdeck and QWord

All games are available on disk or for use with Q-emulator on the PC **from ONLY £5 each**.

Microdrive versions also available - from £10 each.  
*Memory / system limits may apply - please check before ordering.*

Visit the QL Wiki for more details on software, books and hardware for the Sinclair QL:  
[www.rwapadventures.com/ql\\_wiki](http://www.rwapadventures.com/ql_wiki)

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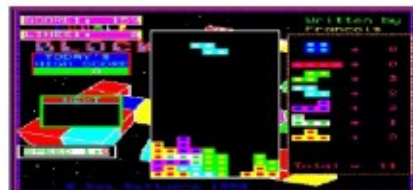
Vroom by Pyramide



E.V.A. by Westway



Mortville Manor by Pyramide



Double Block by Francois Lancaut



Night Nurse by Microdeal



## QUANTA Magazine

```
860 AT 5,18:PRINT move_from
870 IF num(move_from)=0
880 AT 6,10:PRINT"Base ";move_from;" Is Empty!!"
890 BEEP 0,500,10,1,1000,0,0,0
900 a$=INKEY$(100)
910 BEEP
920 get_move
930 END IF
940 AT 5,20:PRINT " To Base  ?"
950 a$=INKEY$(-1)
960 move_to=CODE(a$)-48:IF move_to<1 OR move_to>3
THEN GO TO 950
970 AT 5,28:PRINT move_to
980 IF stack(move_from,num(move_from))<stack
(move_to,num(move_to)) OR move_from=move_to
990 AT 6,9:PRINT"You Can't Do That!!"
1000 BEEP 0,10,10,500,500,0,0,0
1010 a$=INKEY$(100)
1020 BEEP
1030 get_move
1040 END IF
1045 END IF
1047 REMark HEART OF MOVING!! (?)
1050 num(move_to)=num(move_to)+1
1060 stack(move_to,num(move_to))=stack(move_from,num
(move_from))
1070 stack(move_to,num(move_to))=stack(move_from,num
(move_from))
1072 REMark why same stmt twice in orig'l(?) Seems to
work...!
1080 erase=1:disc move_from,stack(move_from,num
(move_from)),num(move_from)
1090 num(move_from)=num(move_from)-1
1100 IF num(move_from)>0 THEN disc move_from,stack
(move_from,num(move_from)),num(move_from)
1110 disc move_to,stack(move_to,num(move_to)),num
(move_to)
1120 moves=moves+1
1130 IF moves>9 THEN AT 2,22:ELSE AT 2,23
1140 INK 7:PRINT moves
1150 IF num(3)=num_discs THEN end_game
1155 IF num_discs <= 2 THEN RETURN
```

## QUANTA Magazine

```
1160 get_move
1165 END DEFine get_move
1170 REMark
1180 DEFine PROCedure end_game
1190 REMark
1200 BLOCK 500,45,0,30,1
1210 PAPER 3 : INK 7
1220 BEEP 25000,1,25,0,10.1,0,0
1230 AT 3,3 : PRINT"Well done!!-you solved the
puzzle."
1232 AT 4,9 : PRINT"You needed ";moves;" move(s)."
```

```
1233 IF num_discs <= 2 THEN RETURN
1234 AT 6,7 : PRINT"Press a key for another go."
1240 a$ = INKEY$(-1):RUN
1250 END DEFine end_game
1260 DEFine PROCedure how_many
1267 PAPER 3: INK 7
1268 AT 3,13: PRINT"TOWERS OF HANOI:"
1270 AT 4,10:PRINT "How many discs do you want"
1275 AT 5,13:PRINT "to move (4 to 8)?: "
```

```
1280 a$=INKEY$(-1): num_discs=CODE(a$)-48
1290 IF num_discs < min_discs OR num_discs >
max_discs THEN GO TO 1280
1295 AT 5,30:PRINT;num_discs;
1343 AT 6,10: PRINT" Press any key to continue":
PAUSE
1344 PAPER 0: INK 7
1350 END DEFine how_many
1360 DEFine PROCedure init2
1370 default_from = 1
1380 default_to = 3:default_height = 22:
def_num_discs = 5
1390 num_discs = 0: min_discs = 4: max_discs = 8
1400 stack_ht = default_height * def_num_discs
1410 END DEFine init2
1420 DEFine PROCedure if_hint
1430 PAPER 3: INK 7: AT 6,2:PRINT "WAIT!!"
1435 AT 7,2:PRINT "Do you want The Hint for Towers?
(y/n):"
1440 a$=INKEY$(-1): IF (a$="y" OR a$="Y") THEN play2
1442 AT 6,2: PRINT"      "
```

```
1445 PAPER 0: INK 7: REMark progr'g guess
```

## QUANTA Magazine

```
1447 AT 7,2: PRINT"  
"  
1450 END DEFine if_hint  
1460 DEFine PROCedure play2  
1470 save_num=num_discs: save_from=move_from:  
save_to=move_to  
1475 save_moves=moves: save_erase=erase: save_moves  
= moves  
1477 save_num1=num(1): save_num2= num(2):  
save_num3=num(3)  
1478 AT 6,2:PRINT"      "  
1480 AT 7,1:PRINT "First Hint Game: One Disc. Odd  
one, eh?"  
1485 PAUSE 300  
1490 num_discs=1: num(1) = num_discs: num(2)=0: num  
(3)=0: moves = 0  
1492 PAPER 0  
1495 move_from=1: move_to=3  
1500 set_screen : REMark need various Pauses, etc  
here  
1505 PAUSE 250  
1510 get_move :  REMark CONGRATS! & continue  
1515 PAUSE 300  
1520 AT 7,1:PRINT "Second Hint Game: Two Discs."  
1522 AT 8,1:PRINT "Even I get this."  
1525 PAUSE 250 : moves = 0  
1527 PAPER 0  
1530 num_discs=2: num(1) = num_discs: num(2)=0: num  
(3) = 0: set_screen  
1535 PAUSE 200  
1540 move_from=1: move_to=2: get_move  
1545 PAUSE 250  
1550 move_from=1: move_to=3: get_move  
1555 PAUSE 250  
1560 move_from=2: move_to=3: get_move  
1562 AT 7,10:PRINT " And there you have it!"  
1565 PAUSE 250  
1570 num_discs=save_num: move_from=save_from:  
move_to=save_to  
1573 moves=save_moves: erase=save_erase: moves =  
save_moves
```

## QUANTA Magazine

```
1575 num(1)= save_num1: num(2)= save_num2: num(3) =  
save_num3  
1576 PAPER 0  
1577 set_screen  
1580 END DEFine play2
```

Doug LaVerne  
103 Endicott Lane  
Oak Ridge, TN 37830 USA  
QL Forever

### TALLY OH!

Steve Poole

In a recent edition of Quanta, Dilwyn asked if it would be possible to sort text using tally sorting. Originally I had thought this impossible, but had a new idea, tested it using some extra code Dilwyn had published, and It worked! I have not yet finished developing the prototype, but as things stand it can sort at over 880,000 words per second in Basic, and I will write an article with the program next time round. For the moment I will concentrate on whole numbers.

Dilwyn printed a simple tally routine in the last Quanta magazine, and you could start by first studying that. I wrote that code in 1984 when doing the beginners guide that came with the QL. At the time I had no idea of its performance, but when Dilwyn printed an article on sorting I realised it was faster than any of them. Recently I discovered that a program using the same method, named 'counting sort', was written in 1954 by Harold H Seward. But at that time the program was probably useless as computers had so little memory, and tally sorting is very memory intensive.

A tally program uses an array of memory as large as the largest integer to be sorted. In the first routine, every time a number is taken, the memory cell at that number address is increased by one, until the whole list is tallied. The second routine looks through the whole memory array

## QUANTA Magazine

starting from address zero, and if the cell contains a number, (its 'tally'), notes as many times the cell address as their are tallies. At the top of the array, the integers are thereby sorted. The beauty of tallying is that each number is represented by just one bit! That is compression at its best.

The program will sort 132 megabytes of whole numbers times 32766, (16 bit addresses), quite enough for anybody. You define the quantities you want using the variables at the start of the program to save processor time.

Loading the numbers to sort takes time, as they will be probably be in fairly random order, and this means caching is not possible. But as the sorting is done in one contiguous scan of memory, caching is turned on, explaining the blistering speed of the code. If you want to sort just a few very (very) big numbers, the routine will be at its most inefficient, but will probably never take more than a handful of seconds to complete. I have restricted the program to only sort QL 16 bit integers, as otherwise the code would be much more complicated, as it would need a 32-bit random number generator to be included, and that is a task I have not yet undertaken.

If you want to see numbers print out as the program runs, set the PR variable to 1, but only when using quite small numerical values, else you will have to wait for hours and the timings will be wrong. So next time we will have similar code but sorting text to satisfy Dilwyn, then maybe another program using George Gwilt's 64 bit integers to push the method to its ultimate limits.

### Listing

```
100 ::  
110 REMark Tally_int_max_bas v1_09_2011  
120 CLCHP: CLEAR: CLS  
130 :
```

## QUANTA Magazine

```
140 REMark max memory cells = 128Mb : 132,361,600/2 =
16 bit words
150 REMark max number of integers to sort is
2,000,000,000,000 (2E12)!
160 cell$='32765': cells=cell$: integers=1E7:
ramtop=cells*2: max$='2147484000'
170 adr=ALCHP(ramtop+1): pr=0
180 :
190 CACHE_OFF
200 REMark allocate the tallys:
210 FOR ct=1 TO integers
220     REMark create integers to sort
230     whole_no$=RND(cells)
240     REMark Rewrite the above randomising line if
cells > 32766
250     REMark or input whole number value from your
own file to be sorted.
260     rand=whole_no$: IF pr: PRINT rand!!
270     REMark tally the database:
280     cell=adr+rand*2: tally=PEEK_W(cell): POKE_W
cell,tally+1
290     IF tally=32766: PRINT 'tally overflow': STOP
300 END FOR ct: PRINT\
310 :
320 REMark set timer
330 d1=DATE: IF d1=DATE: GO TO 330 : ELSE d1=DATE
340 :
350 CACHE_ON
360 REMark search ram for tallies:
370 FOR ct=0 TO ramtop STEP 2
380     REMark see if cell contains a tally:
390     cell=adr+ct: tally=PEEK_W(cell)
400     IF tally THEN
410         ct2=ct/2
420         REMark Are there any equal whole_nos:
430         IF pr: FOR twins=1 TO tally: PRINT ct2!!
440     END IF
450 END FOR ct
460 :
470 d2=DATE-d1 : PRINT '\\d2!'secs': RECHP adr
480 ::
```

**Notice No 1**

Invitations are invited from QUANTA members and Sub-Groups to organise and run a workshop at which the ANNUAL General Meeting will be held on the weekend March 24/25<sup>th</sup> 2012.

All the usual criteria should be considered but not restricted to the following:

- Adequate off road parking
- Easy access to the building (and/or meeting rooms)
- Available space and equipment to provide refreshments
- Room large enough to meet the requirements of attending members
- Adequate power outlets, tables and chairs for all members to bring their own equipment
- Separate adjacent room that can be used for talks, presentations and the Annual General Meeting

The Annual General Meeting is open to all members.

Any Sub-Group or individual members who wish to organise this event should write to or email the Secretary with full details and costings to be received by November 5<sup>th</sup> 2011. Quanta Committee will offer full support to any member or Sub-Group chosen to host this event.

Signed: Alison Southern

QUANTA Secretary

[sectreatary@quanta.org.uk](mailto:sectreatary@quanta.org.uk) – or postal address inside front cover of this Magazine.

**A** brief message to you all this time.  
The invitation for volunteers to host the Annual General Meeting is in this magazine.

Usually this is held towards the end of April, largely dependant on Easter; but this next year we will hold it on the weekend of March 24<sup>th</sup>/25<sup>th</sup> 2012. John and I are going on an extended tour of the USA, leaving on March 31<sup>st</sup> and we wish to attend the A.G.M before we go.

The last issue of the magazine had the proposed amended Constitution for all our members to read and make comment on. To date we have only received one such comment. Please read it as the Constitution is being amended to comply with members (and non-members) criticisms.

Further progress has been made on the QUANTA Website and our thanks go to Dan Abbott and Keith Dunbar for all their hard work. Our thanks also go to Dilwyn Jones for keeping us all up to date on the latest news and events.

We welcome Rob, who attended last month's Nemqlug meeting, and taking away some of the early magazines to proof read before they can be put onto the Website. He also took a second year's worth for OCRing. Thank you Rob.

The next magazine is already started and we hope to catch up by the end of the year.



## SUBGROUP MEETINGS

**S**ub group meetings are where QUANTA members and non-QUANTA members get together to discuss, tinker and explore all things QL related. If there is a subgroup near you then why not pop along and see what's happening, you never know there may be something you could help with or a problem that you know the answer to. If there is not a sub-group near you why not hold one yourself? (Ed.)

---

## THE WEST MIDLANDS QL USER GROUP

**T**here has been a change of venue, brought about by the owners of the Queens Head pub changing it from a straight pub into an eatery. The new meeting place is called the Bull, the address is 1 Price Street, Birmingham, B4 6JU. Approx 7 minutes walk from Snow Hill main-line railway station and has ample street parking nearby. Meetings remain open to QUANTA members and non-members alike.

After your first meeting you're expected to pay £1 each time towards the organisation and monthly newsletter costs - except once a year when the group pays all those who attend a pound instead ;-)

We provide food twice a year for those who attend the AGM and the group's birthday party) and at meetings we discuss all sorts of things, QL-related and otherwise, usually from about 8:20pm onwards till 10:30 or later. The group owns QL hardware, a disk library and subscribes to relevant magazines. People can join the mailing list for £3.50 per year, even if they can't attend regularly.

Meetings: Meetings are usually on the first and third Monday of each month (but not on bank holidays unless the previous one was cancelled for that reason).

Contact: The contact number remains Mike Bedford White's, on 0121 605 4438, anytime after 11am.

[Email: mikebwhite@blueyonder.co.uk](mailto:mikebwhite@blueyonder.co.uk)

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# QL Today Subscription

We at QL Today are moving into our 16th year! The upcoming issue 1 of Volume 16 will come with a DVD (included in the price) containing all previous issues of QL Today in PDF format - from Volume 1 to Volume 16, English and German (as long as German ones were produced). Don't miss it - by subscribing for Volume 16, you get 15 complete Volumes from the past to read as well!

You can subscribe by using this form (or a copy of it), or subscribe online via [www.QLToday.com](http://www.QLToday.com) (the form can be downloaded), by email, letter, fax etc. ... we are flexible!

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**THE DVD IS A REAL SUCCESS!**  
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**DVD**

I hereby subscribe to **QL Today** for 4 issues of Volume 16. The total price for all four issues is as follows, including postage and packing (depending on destination)

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  - UK customers can pay £29.90 (price based on exchange rate at print time, valid until Nov. 2011) to  
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## QUANTA Magazine

### QUANTA DORSET SUBGROUP – Dorset

**M**eetings are held, on the second Sunday of each month between 2.00pm and 5.00pm. For location please contact: John Penn-Simkins - 01202 422491 or John Mason - 01425 275894

---

### LONDON QL AND QUANTA GROUP

**M**eetings are held in the School Room, which is the basement of the Borough Welsh Congregational Chapel, 90, Southwark Bridge Road, London SE1. This is almost opposite the junction with Marshalsea Road, at the other end of which, 5 minutes walk away, is the Borough Underground Station. Free parking is easily available in Southwark Bridge Road for road users, Cyclists are welcome.

Members currently each pay a subscription of £40 per year towards the cost of the hire of the hall and a small additional charge is made for tea/ coffee - biscuits are then provided free.

Please bring your QL equipment if possible, all types welcome, e.g., PC portable running emulators. The Group has some systems stored at the venue for its use. In addition, there are lots of donated second user equipment, books, magazines, etc., available for purchase. Time: 2.00 pm. to 5.00 pm., on the second Sunday of the month. No meetings are held in December / January - winter break, or July / August –the summer break, giving 8 meetings a year. Malcolm Cadman - 020 8691 5780

[Email: QL@mcad.demon.co.uk](mailto:QL@mcad.demon.co.uk)

---

### NEMQLUG - THE NORTH EAST MANCHESTER QL USER GROUP

**M**eetings are held at 181, Urmston Lane, Stretford, Manchester. M32 9EH (Near Junction 7 of M60 Motorway - Was Junction 7 M63 Motorway). Our informal meetings start at 7 p.m. and finish at 11 pm. All welcome. Meetings are on the last Thursday of each month (except December). John/Sarah Gilpin – 0161 865 2872 ([thegilpins@btopenworld.com](mailto:thegilpins@btopenworld.com))

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## SCOTTISH QL USERS GROUP

**S** QLUG meets at George Gwilt's home every second Sunday in the month. Please contact George Gwilt before coming, to get the location. [Gdgqler@gmail.com](mailto:Gdgqler@gmail.com)

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## SOLENT SUBGROUP

**M** eetings are at Botley Market Hall, all welcome. Park at the back and use side entrance on the 1st Saturday of the month from 2.00 pm to 6.00 pm. Graham Evans - 023 8040 3350.

---

## SURREY QUANTA SUBGROUP (SQSG)

**T** he group is currently trying other venues in the Leatherhead - Epsom area. If you plan to attend but do not get our emails, please phone or email Ken Bain for the latest location. Meetings are 8.00 to 10.00 pm on the last Wednesday of each month except December. Ken Bain - 01932 347432 (to midnight), [kenb@bcs.org.uk](mailto:kenb@bcs.org.uk)

---

## SUSSEX QL USER GROUP

**C** urrently without a meeting place, anyone interested should contact Roy Wood - 01273 430501 or Keith Mitchell - 01903 742263.

---

First a plea from a member in search of some software.

I'm trying to track down a copy of Fleet Tactical Command by Di-Ren. Anyone who can help please contact:

[peetvanpeebles@yahoo.co.uk](mailto:peetvanpeebles@yahoo.co.uk)



Finally, Geoff Wicks writes

## COLOUR BLIND? - AN AFTER THOUGHT

Not long after clicking on SEND to transmit the first part of Colour Blind? to the editor, I had an important after thought. It is mainly for people who would like to try programming in the new colours, but who still find it too much hassle to look up the number of a colour in another program.

There are 64 colours where the job has already been done for you, and they are colours that will reproduce correctly on all systems able to use GD2 colours. The first 64 colours of the 256 palette colours have been given names and you can look them up in the accompanying table. Do not forget to add 256 to the number in the table!

All you have to do is prefix the characters WM\_ to the usual colour commands. Thus for a Light Green background you would use WM\_PAPER 271.

## QUANTA Magazine

Incidentally these are the colours that are used in GD stipples. The formula that is used for stipples is:

$$\text{stipple} = 16384 + \text{type} * 4096 + \text{colour1} * 64 + \text{colour2}$$

Type is the type of stipple and is:

0 = dot

1 = horizontal stripe

2 = vertical stripe

3 = chequers

Thus if we wanted a Plum and Dark Grey chequered stipple it would be:

$$\text{stipple} = 16384 + 3 * 4096 + 51 * 64 + 10 = 16384 + 12288 + 3264 + 10 = 31946.$$

The paper command for the stipple would be WM\_PAPER 31946.

0 Black	22 Orange	44 Steel blue
1 White	23 Lime green	45 Dull pink
2 Red	24 Apple green	46 Brown
3 Green	25 Bright blue	47 Khaki
4 Blue	26 Mauve	48 Dusky green
5 Magenta	27 Peach	49 Dusky blue
6 Yellow	28 Light yellow	50 Midnight blue
7 Cyan	29 Light blue	51 Plum
8 Dark slate	30 Sky blue	52 Dusky pink
9 Slate grey	31 Rose pink	53 Buff
10 Dark grey	32 Pink	54 Avocado
11 Grey	33 Beige	55 Dull turquoise
12 Light grey	34 Pastel pink	56 Dull blue
13 Ash grey	35 Pastel yellow	57 Faded purple
14 Dark red	36 Pastel green	58 Cerise
15 Light green	37 Pastel cyan	59 Tan
16 Mustard	38 Pastel blue	60 Grass green
17 Dark green	39 Pastel rose	61 Sea green
18 Sea blue	40 Brick	62 Ultramarine
19 Dark blue	41 Light khaki	63 Deep purple
20 Purple	42 Dull green	
21 Shocking pink	43 Dull cyan	

**B**esides all the usual great features you expect from QUANTA, the Helpline, QUANTA News, we have a continuing article from Steve Poole on sorting, more information on a relatively cheap hardware alternative to the original 'Black Box' QL in the form of the Raspberry Pi and hopefully a regular new feature, but more about that next time. But what else would you like to see?

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QUO VADIS  
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www.ql-qvd.com

The screenshot shows the Quo Vadis Design website. At the top left is the logo 'QUO VADIS DESIGN' and the tagline 'Independent Information Technology Services'. The top right says 'QL/QDOS/SMSQ/E Software'. A red navigation bar contains links for 'Home', 'Products', 'Support', 'Company', and 'Contact'. Below the navigation bar, there is a 'Welcome' section with a message about software for the Slocat Quantum 1 meg computer (QL) and a note that the QL is a computer in its 20th year anniversary. Next to this is a 'News' section with two items: 'QVD QL News Blog - keep up to date' with a link to 'News Blog' and 'Quo Vadis Design Website Launched'. To the right is a 'FEATURED PRODUCT' section showing a box for 'QPC II' with a 'BUY NOW!' button. At the bottom of the screenshot, there is a copyright notice for 2009 Quo Vadis Design and a footer with links for Home, Products, Support, Company, and Contact.

QL/QDOS/SMSQ/E Software

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